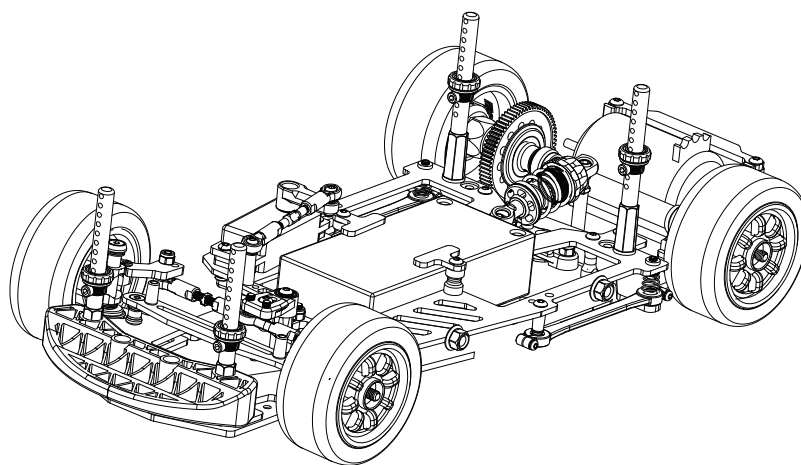


COMPETITION GRADE HIGH PERFORMANCE RADIO CONTROL RACING CAR CHASSIS KIT

VARIA MPAN-RR

1/10 SCALE ELECTRIC COMPETITION CAR KIT



INSTRUCTIONS MANUAL



Thank you for purchasing VBC Racing product.

Things that we should remind you.

This VBC Racing kit is a high performance, racing grade car kit intended for experienced racers. The kit compose of VBC formulated composite materials, top quality full carbon fiber chassis and high grade 7075 material which will give you a competitive edge over the others.

Novice racer should seek advice from more experienced racer before assembly.

Always keep this instruction manual handy at all times for quick reference even after completing the assembly.

Before your assembly, sand the chassis edges.

Sand the chassis edges with #600 sand paper and apply CA glue to the edges and counter sink holes.

Need help or support.

If you need help or you would like to leave us a comment, please email to our support team: support@vbc-racing.com or visit our web site www.vbc-racing.com





Graphite Edges Protection Procedure

Welcome to the VARIA Experience

Thank you for purchasing the VARIA MPAN-RR.

In recent years, modern RC racing has continuously pushed the boundaries of absolute speed, downforce, and traction. While this pursuit of raw lap times has produced impressive machines, it has also gradually moved away from the authentic, physical sensation of real motorsport. Cars have become so glued to the track that driving them can feel more like operating on rails than mastering actual vehicle dynamics.

The **VARIA** Collection was born out of a passion to bring the soul back to RC racing. Our guiding philosophy behind VARIA is simple: *Real Dynamics, Real Physics, Real Engagement*. We set out to engineer platforms that faithfully recreate full-scale vehicle behavior at scale. With **VARIA**, performance is not determined solely by artificial grip, but by how skillfully you manipulate weight transfer, throttle modulation, trail-braking, and chassis setup.

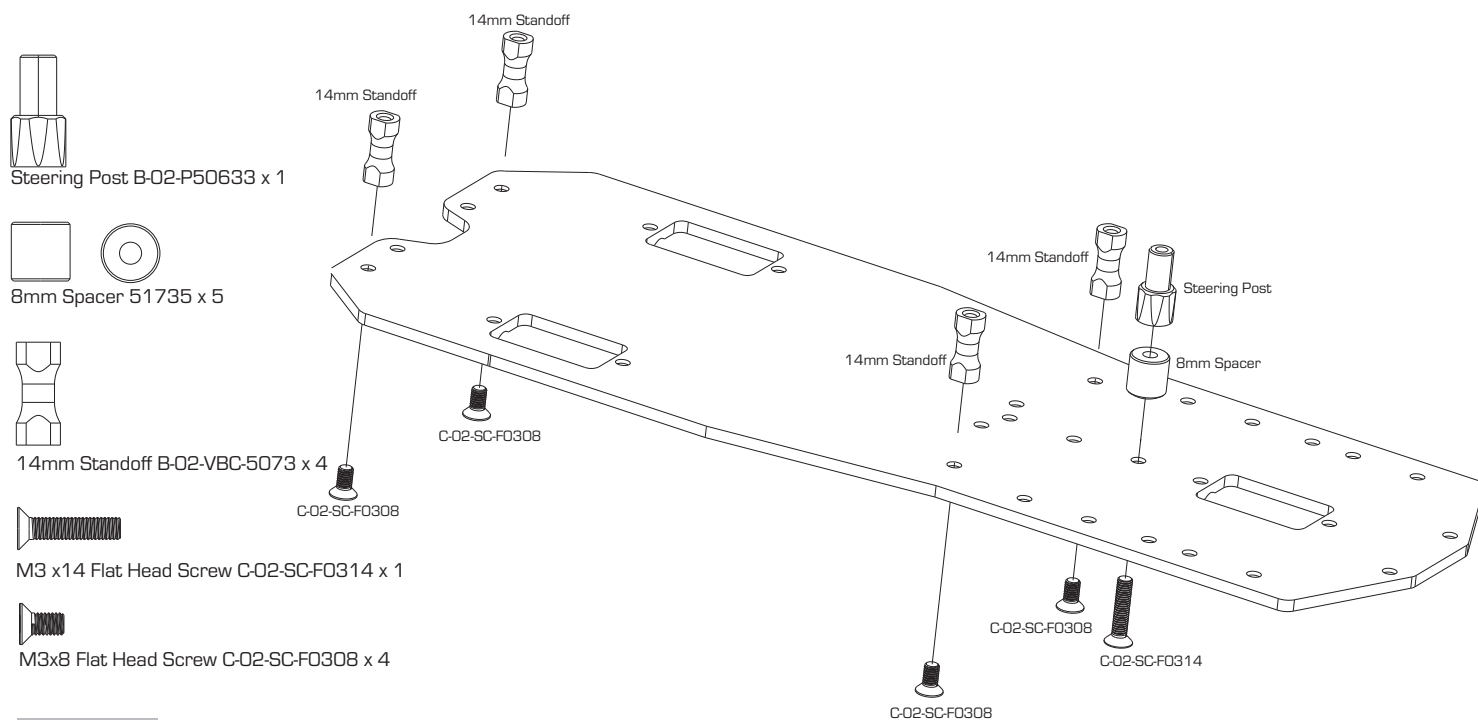
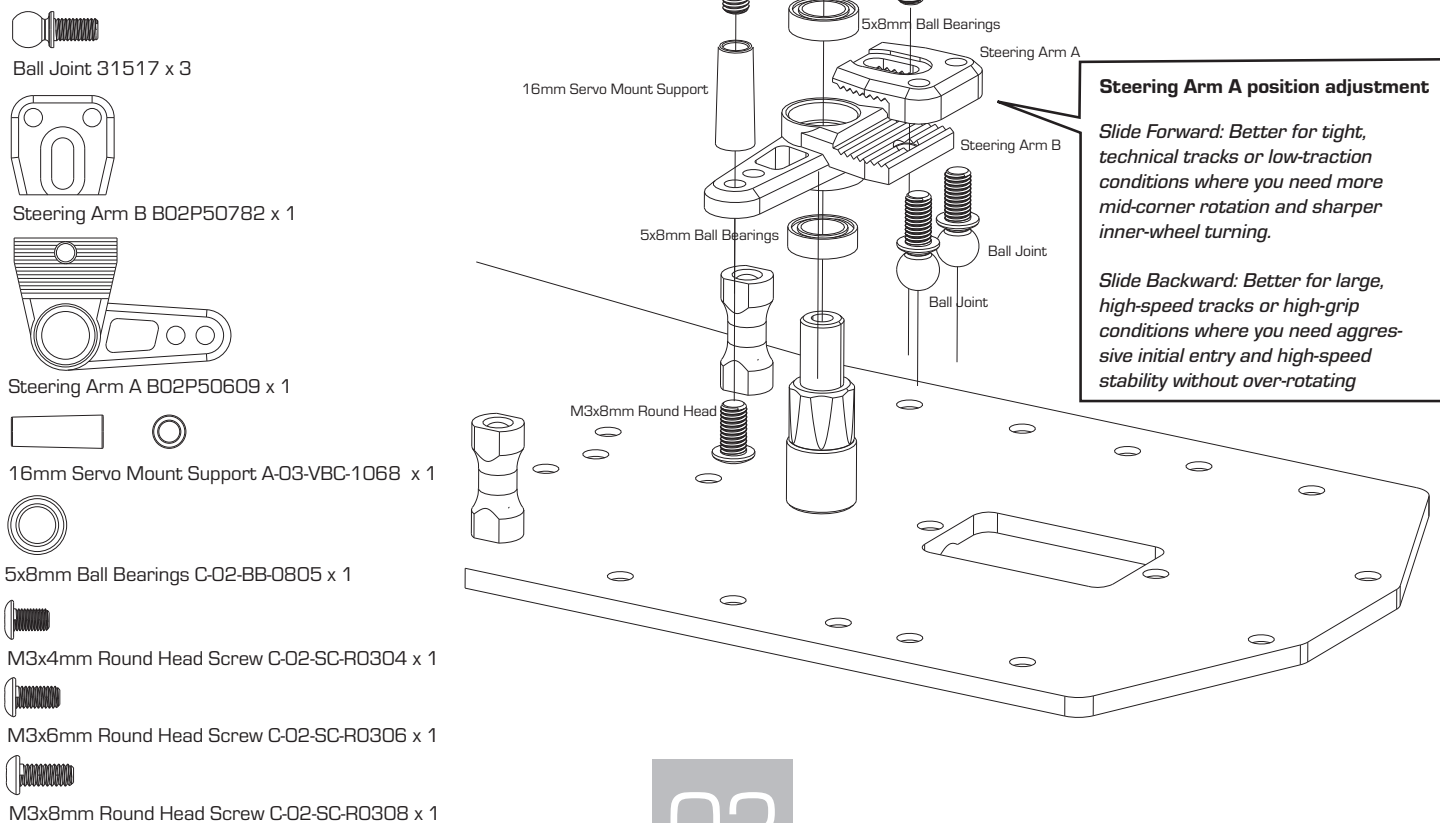


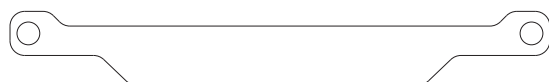
The **MPAN-RR** is the premier platform designed under this vision. Engineered as a rear-engine, rear-wheel-drive (RWD) chassis, it mimics the raw power delivery and distinct handling characteristics of iconic rear-engine sports cars. It demands respect, finesse, and deliberate control—rewarding precise inputs with unmatched driving satisfaction as you balance the rear end through sweeping corners and tight chicanes.

Every component in this manual has been meticulously designed and extensively tested to deliver an authentic, high-precision driving experience. Whether you are building this kit for scale-realistic club racing, tuning for optimal handling, or simply rediscovering the pure joy of driving real physics, we are thrilled to welcome you to the next chapter of VBC Racing.

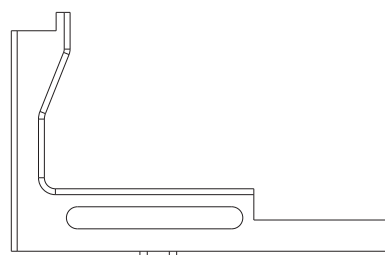
Take your time with the assembly, enjoy the build, and see you at the track.

VBC Racing

1*Main Chassis Assembly***2***Main Chassis Assembly*

3*Rear Pod Assembly*

Rear Pod Graphite Strut 51647 x 1



Rear Pod Mount B02P50664 x 2



21mm Aluminium Post B02P51644 x 1



2mm Spacer A-03-VBC-0052 x 2



Ball Joint B-02-VBC-0045 x 1



4.7mm Thin Ball Nuts B02P51288 x 1



Pivot Ball 5mm A-03-VBC-1027 x 2



M3x6 Round Head Screw C-02-SC-R0306



M3x16 Set Screw C-02-SS-0316



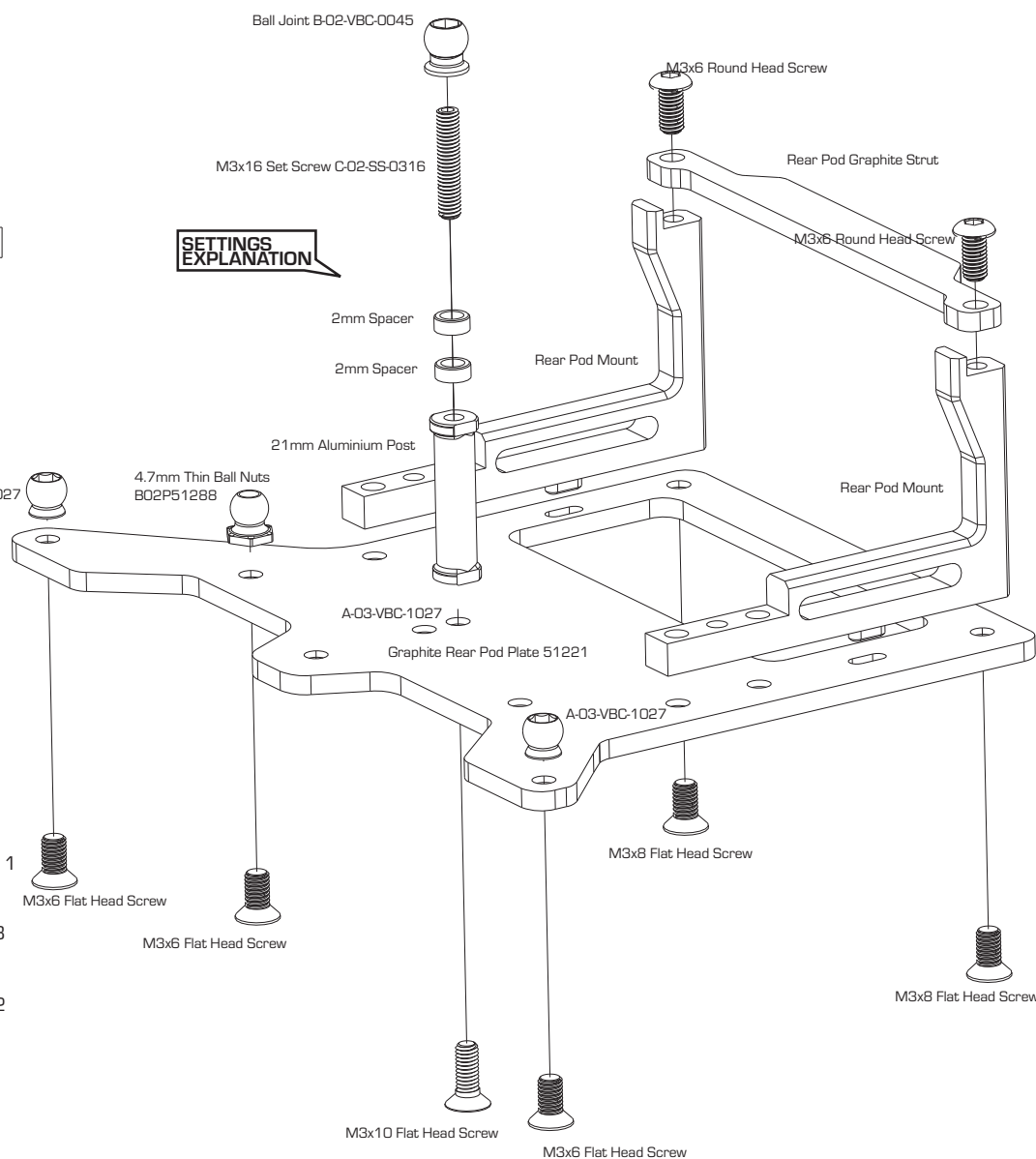
M3x10 Flat Head Screw C-02-SC-F0310 x 1



M3x6 Flat Head Screw C-02-SC-F0306 x 3

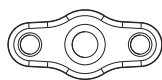


M3x8 Flat Head Screw C-02-SC-F0308 x 2

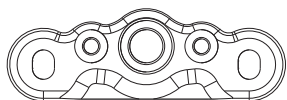
**SETTINGS
EXPLANATION****SETTINGS
EXPLANATION**

Increasing the standoff height makes the center shock stand up more vertically. This causes the car to respond much faster to initial acceleration and weight transfers. It increases suspension progression and gives the car more aggressive steering on corner exit. However, it can make the vehicle feel twitchy and unsettled over bumps.

Decreasing the standoff height lays the center shock flatter. This softens the initial suspension movement and helps the rear pod absorb bumps smoothly. It creates a calmer weight transfer, which improves stability on low-grip or bumpy surfaces. The trade-off is a slight reduction in initial steering response and a delayed feel on-power.

4*Rear Pod Assembly*

Center Pivot Top Clamp Plate A-03-VBC-1037 x 1



Center Pivot Bottom Support Mount A-03-VBC-1036 x 1



M2x6 Cap Head Screw C-02-SC-R0206 x 2



M3 Lock Nut C-02-SC-NN03 x 2

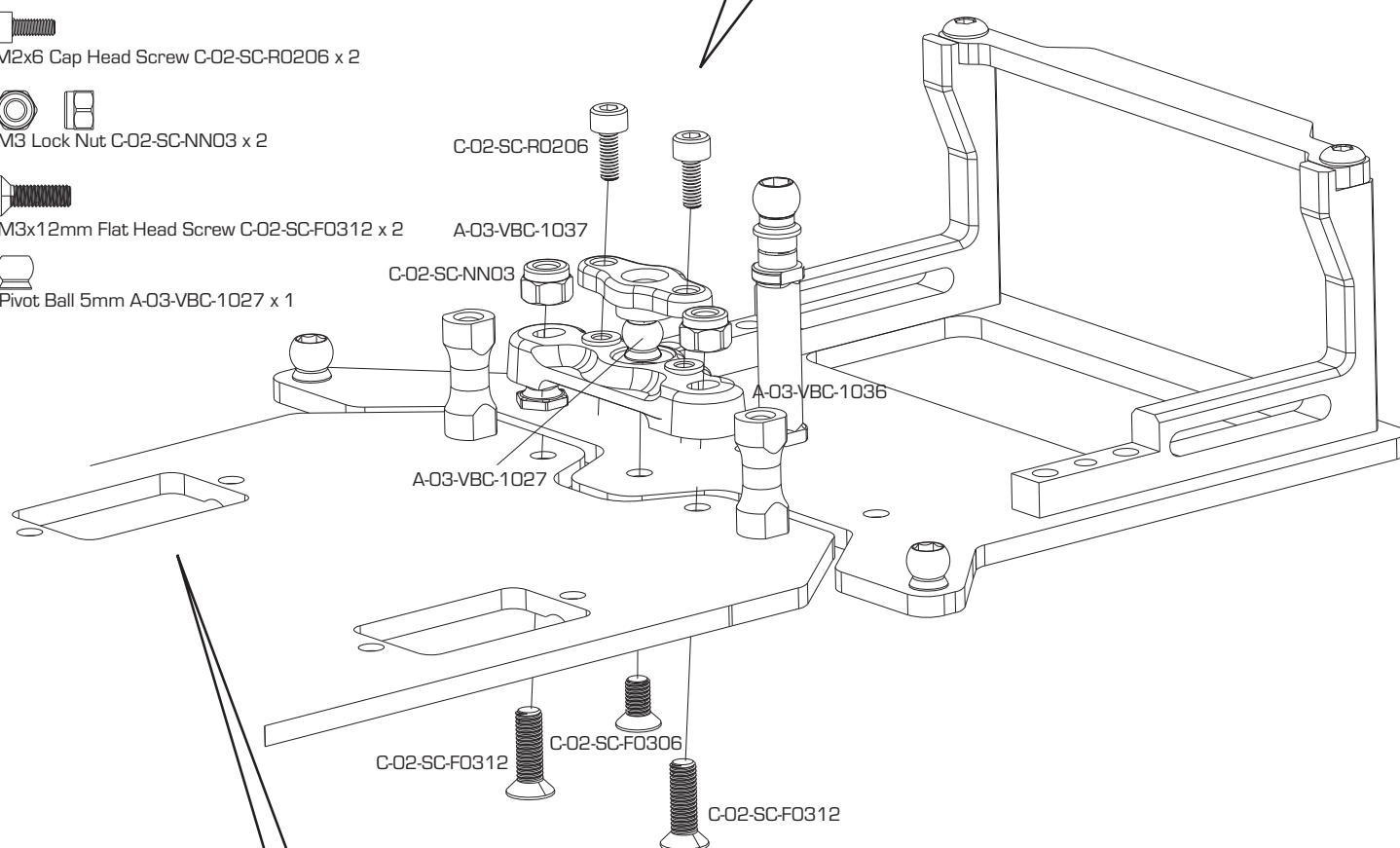


M3x12mm Flat Head Screw C-02-SC-F0312 x 2



Pivot Ball 5mm A-03-VBC-1027 x 1

When installing the center pivot top clamp plate, make sure the pivot can move freely without binding when screwing on the screws.

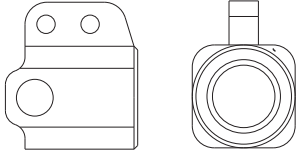

**EXCITING SETTINGS
EXPLANATION**

Adding weights to both sides near the rear of the main chassis creates a pronounced pendulum effect. Because the heavy motor is already cantilevered far back, adding extra weight further back greatly increases the rear polar moment of inertia.

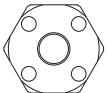
Under acceleration, this extra rear weight plants the rear tires heavily, generating immense straight-line traction. However, when entering and exiting corners, that rear-biased mass acts like a pendulum swinging wide. This makes the car much slower to rotate mid-corner, prone to heavy push or understeer on entry, and extremely snappy or difficult to catch once the rear tires finally break loose and spin out.

5

Front Suspension



Aluminium Steering Block 51706 x 2



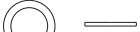
Hex Wheel Hub Odeg B02P30887 x 2



M3x3mm Set Screw C-02-SS-0303 x 2



M2x10 Shaft Pin B-02-VBC-0020 x 2



5x8x0.5mm Shim 51713 x 2



5x10 Ball Bearings C-02-BB-1005-B x 4



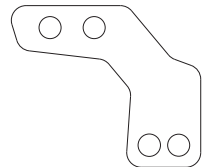
Wheel Axle B-02-VBC-2027 x 2



M3 Lock Nut C-02-SC-NN03 x 2



M3x6mm Round Head Screw C-02-SC-R0306 x 2



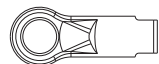
Graphite Steering Arm 51707 x 2



T1 Composite Spacer A-03-VBC-0051 x 2



Ball Connector 31518 x 2



Ball Connector (Long) 31478 x 2



M3x20 Titanium Turnbuckle 51757 x 2

Assemble x 2 (Left & Right)

Ensure bearings [C-02-BB-1005-B] spin freely and seat completely flush inside the block before securing the wheel axle [B-02-VBC-2027].

B02P30887

51713

C-02-BB-1005-B

C-02-SS-0303

Extra 0.5 & 0.3mm shims are included in the OPTIONS bag that you can add if necessary

Apply a small drop of thread lock to the setscrew [C-02-SS-0303] on the hex wheel hub to prevent it from loosening.

EXCITING SETTINGS

EXCITING SETTINGS
EXPLANATION

Changing the mounting position of the steering ball stud [31518] on the steering arm plate [51707] alters the effective steering arm length, directly impacting your **Ackermann geometry**, **steering speed**, and **overall steering response**:

Inner Hole (Shorter Steering Arm):

* **Faster Steering Response:** Gives a quicker, more aggressive turn-in feeling at the steering wheel because the steering link has more leverage to pivot the knuckle faster.

* **More Aggressive Ackermann (Increased Inside Wheel Angle):** The inside wheel turns noticeably sharper than the outside wheel in tight corners. This helps pull the car around tight hairpins, chicane transitions, and low-speed technical tracks, but can make the car feel more twitchy or aggressive on high-speed sweepers.

Outer Hole (Longer Steering Arm):

* **Smoother, More Linear Steering:** Slows down the initial steering speed slightly, providing a smoother, more progressive feel around center stick.

* **Less Ackermann (Flatter Wheel Angle Ratio):** Reduces the angle difference between the inside and outside tires. This provides greater high-speed stability, smoother corner entry, and keeps the car predictable and less "snappy" on open, fast-sweeping layouts or high-traction tracks.

6

Bushings Inserts

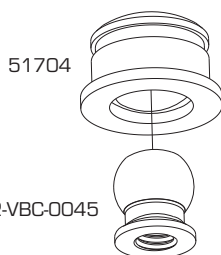


Ball Joint Bushing 51704 x 4

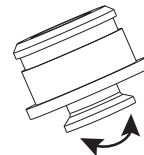


Ball Stud B-02-VBC-0045 x 4

Assemble x 4

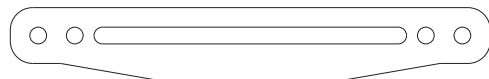


Gently press the ball stud into the bushing using pliers. The ball stud should sit tightly inside the bushing, but still be able to move smoothly when a bit of force is applied.



7

Front Suspension



Graphite Front Struct Plate 51709 x 1



Support Mount 8mm B02P50607 x 2



Mount Support 8mm A-03-VBC-1069 x 2



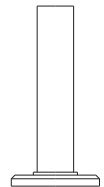
5mm O-Ring (Hard) 51712 x 4



1.0 Camber Spacer 51708 x 2



1.0 Camber Bottom Plate 51721 x 2



Kingpin 23mm 51703 x 2



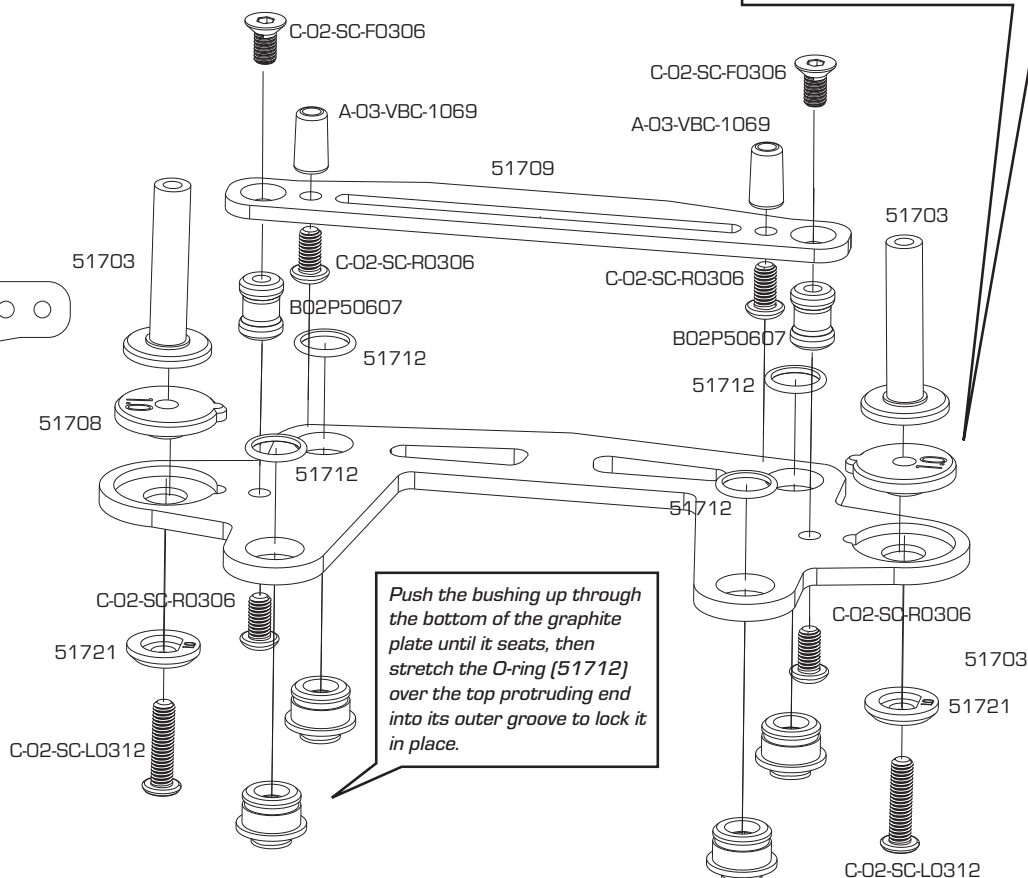
M3x6mm Flat Head Screw C-02-SC-F0306 x 2



M3x6mm Round Head Screw C-02-SC-R0306 x 4



M3x12mm Low Profile Screw C-02-SC-L0312 x 2



EXCITING SETTINGS

Push the bushing up through the bottom of the graphite plate until it seats, then stretch the O-ring (51712) over the top protruding end into its outer groove to lock it in place.

EXCITING SETTINGS EXPLANATION

Camber Angle Plate Assembly Guide (51703 & 51721)

Match Plate Angles: Select matching 1.0° upper (51703) and lower (51721) insert plates for your desired setup (0°, 1.5°, 1.5° and 2.0° are included in the OPTIONS bag). Ensure the numbers stamped on both parts match.

Key the Upper Insert: Drop the upper camber plate (51703) into the top recess of the graphite plate, aligning its outer tab into the matching cutout notch to prevent rotation.

Key the Lower Insert: Fit the lower insert (51721) into the matching recess on the bottom side of the graphite plate, aligning its index tab with the corresponding slot.

Insert the Vertical King Pin: Pass the main upper post component (51703) down through the top camber insert and graphite plate.

Fasten from Below: Secure the entire assembly by threading screw C-02-SC-L0312 up through the lower plate (51721) into the bottom of the central shaft. Tighten until snug so both angled inserts key firmly into the graphite plate without play.

Track Compatibility & Setup Recommendations

0°-0.5° Plates: Technical & Low-Grip Surfaces

Best For: Low-traction asphalt, slippery dust/dirt, or tight technical tracks with sharp hairpin turns where maximum initial steering bite is needed.

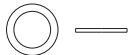
1.0° Plate: Standard / Base Setup

Best For: Medium-grip outdoor asphalt, indoor smooth surfaces, or balanced, flowy track layouts.

1.5°-2.0° Plates: High-Grip & Fast Surfaces

Best For: High-traction carpet, black CRC turf, grooved high-grip asphalt, or fast layouts with sweeping, high-speed corners.

8

Putting on Steering System

5x8x0.5mm Shim 51713 x 12



Aluminium Front Axle Washer B-02-VBC-6005 x 2



Front Spring (MED) 51710 x 2



M3x12mm Flat Head Screw C-02-SC-F0312 x 2

EXCITING SETTINGS [Springs]

This kit includes 3 types of springs
[MED] Silver default, [SOFT] purple & [HARD] black are in
the OPTIONS bag.

Soft Springs

Straights: Best for bumpy tracks; absorbs surface irregularities to maintain tire contact.

Corners: Maximum mid-corner grip on low-traction surfaces, but slower entry speed due to body roll.

Medium Springs

Straights: Ideal baseline balance between bump absorption and high-speed chassis stability.

Corners: Smooth, predictable steering response across most typical track conditions.

Hard Springs

Straights: Keeps the car flat and stable for maximum speed on smooth tracks.

Corners: Sharpest turn-in, faster entry/exit speeds, and prevents flipping on high-grip surfaces.

EXCITING SETTINGS [Kingpin Spacers]

Extra 5x8x0.5mm and 5x8x0.2mm 51777 spacers are included in the OPTIONS bag

Adding or removing the **51713 spacers** adjusts *spring preload* and *front ride height / droop* depending on where you place them:

Spacers Above or Below the Spring (51710 or 5x8x0.2mm 51777)

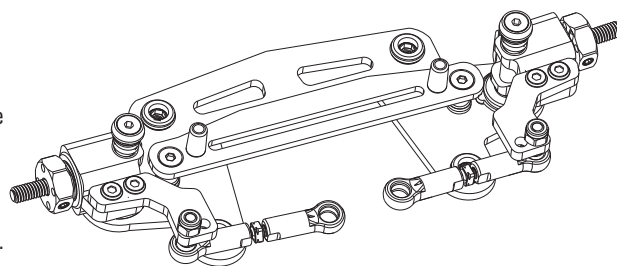
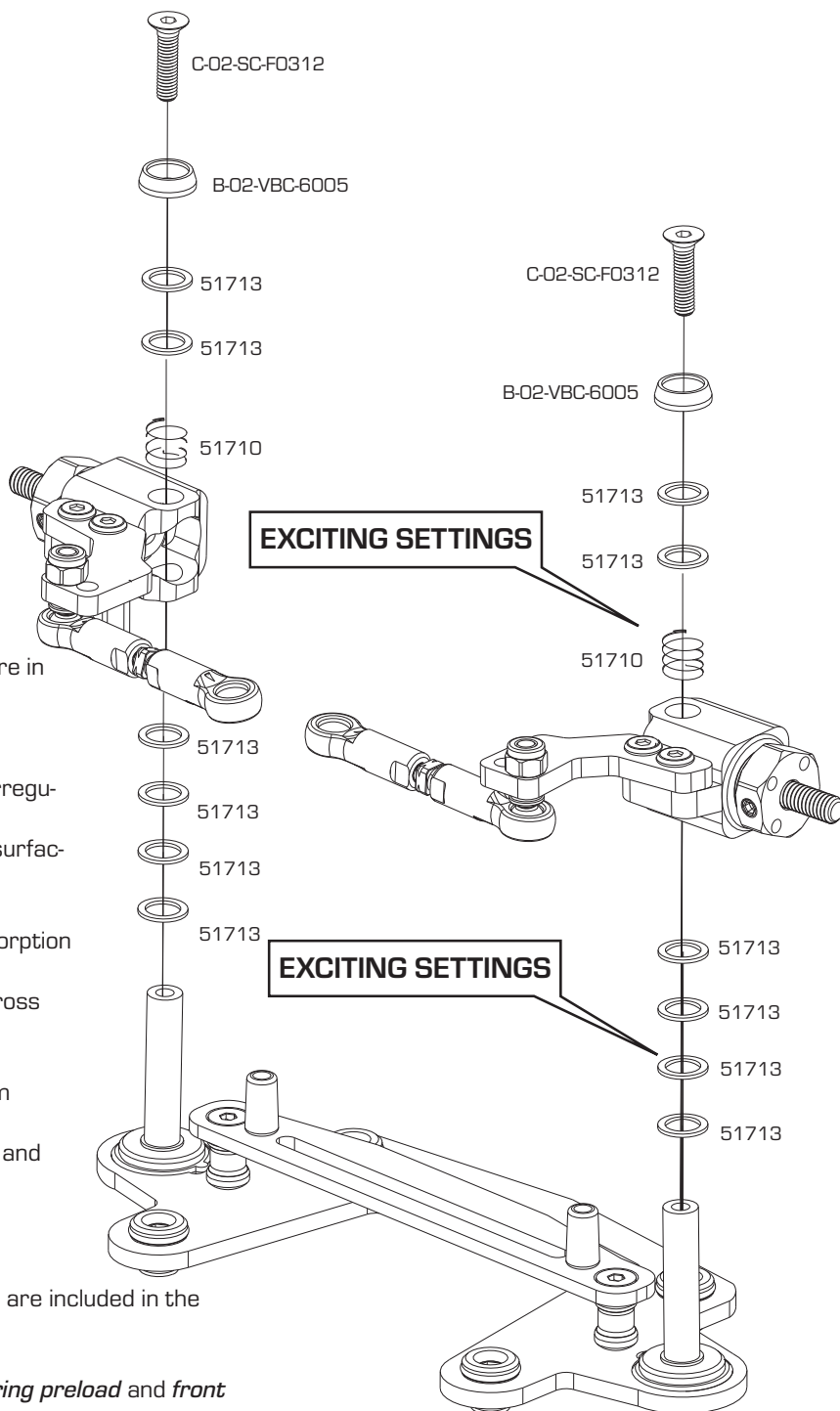
Adding Spacers: Increases spring preload (compresses the spring more). This raises the front ride height and makes the initial suspension travel feel stiffer, resulting in sharper turn-in response and less front chassis roll.

Removing Spacers: Decreases spring preload. This lowers the front ride height, giving the suspension more sag (droop) to absorb bumps better and generate more overall front traction on low-grip surfaces.

Spacers Beneath the Steering Block (At the Base)

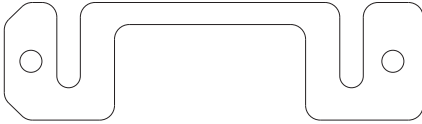
Adding Spacers: Raises the steering block assembly on the kingpin post. This lowers the front chassis ride height relative to the wheels and alters the front roll center and steering axle height.

Removing Spacers: Lowers the steering block on the kingpin post, raising the chassis ride height off the ground.



9

Installing Front Suspension to Chassis



2.0mm Ride Height Spacer 51646 x 2



M3 x 8 Flat Head Screw C-02-SC-F0308 x 2

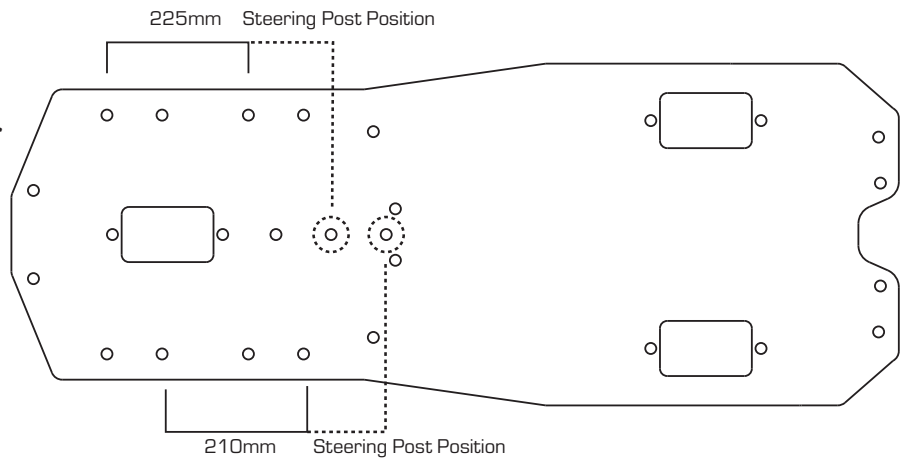


M3x12mm Flat Head Screw C-02-SC-F0312 x 2



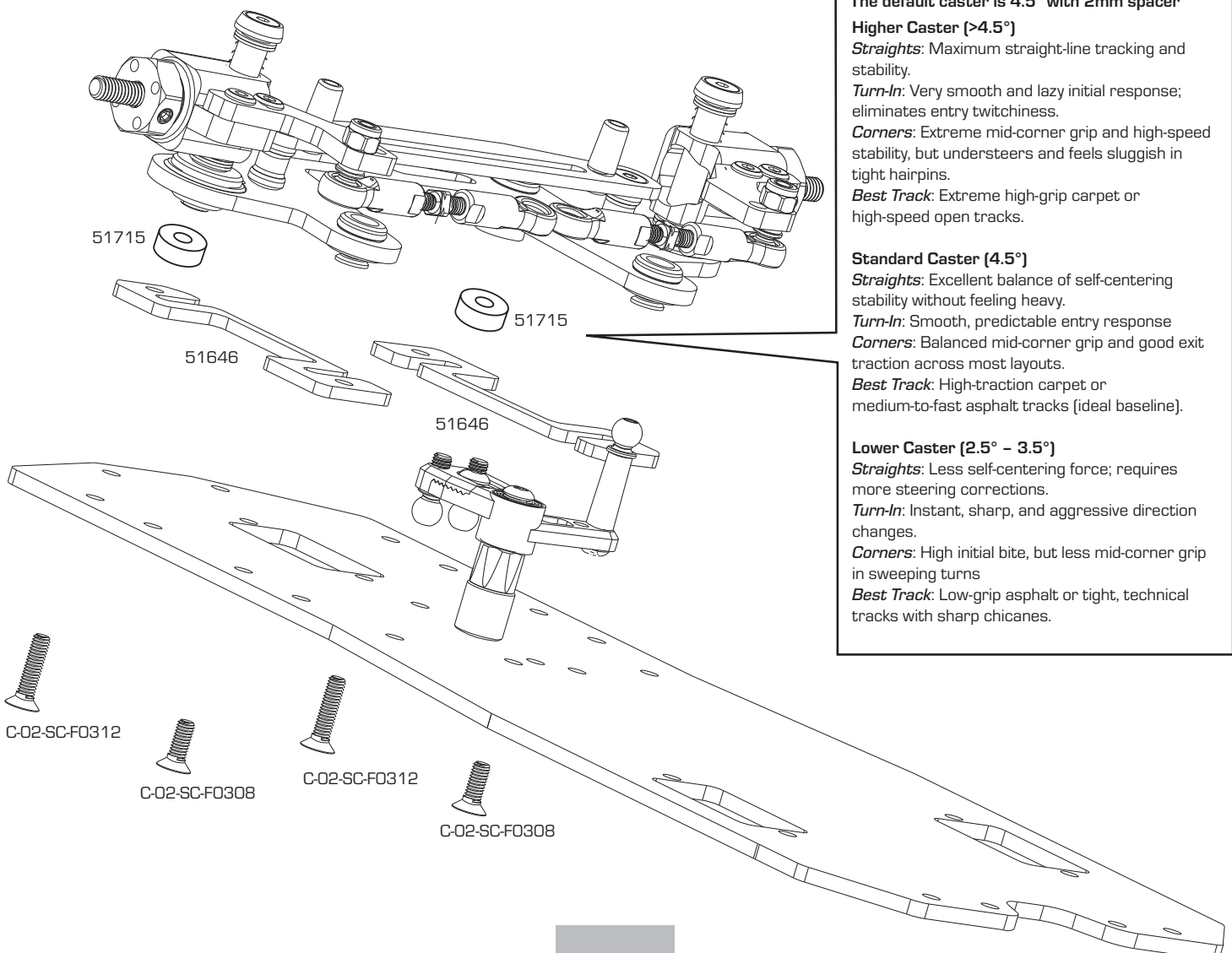
3mm Aluminium Spacer 51715 x 2

Chassis Wheelbase Adjustment



To accommodate 210mm or 225mm wheelbase M chassis car bodies.

For the ultimate driving experience, we strongly recommend pairing the MPAN-RR with an M-Chassis body shell that matches its rear-engine, rear-wheel-drive layout (such as Porsche 911 series replicas). Aligning the body design with the physical weight distribution of the chassis maximizes scale realism and authentic driving dynamics on the track.



The default caster is 4.5° with 2mm spacer

Higher Caster (>4.5°)

Straights: Maximum straight-line tracking and stability.

Turn-In: Very smooth and lazy initial response; eliminates entry twitchiness.

Corners: Extreme mid-corner grip and high-speed stability, but understeers and feels sluggish in tight hairpins.

Best Track: Extreme high-grip carpet or high-speed open tracks.

Standard Caster (4.5°)

Straights: Excellent balance of self-centering stability without feeling heavy.

Turn-In: Smooth, predictable entry response

Corners: Balanced mid-corner grip and good exit traction across most layouts.

Best Track: High-traction carpet or medium-to-fast asphalt tracks (ideal baseline).

Lower Caster (2.5° - 3.5°)

Straights: Less self-centering force; requires more steering corrections.

Turn-In: Instant, sharp, and aggressive direction changes.

Corners: High initial bite, but less mid-corner grip in sweeping turns

Best Track: Low-grip asphalt or tight, technical tracks with sharp chicanes.

10

Upper Deck Assembly



Pivot Ball 5mm A-03-VBC-1027 x 2



4.7mm Thin Ball Nuts B02P51288 x 1



Alum Side Spring Retainer B-02-VBC-5074 x 2



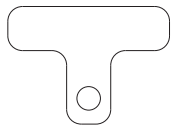
8mm Mount Support A-03-VBC-1069 x 2



1mm Spacer A-03-VBC-0051 x 2



Ball Joint B-02-VBC-0045 x 2



Battery Stopper Plate 51648 x 2



Aluminium Standoff C-02-VBC-5106 x 2



M3 Flushed Nut 51729 x 2



C-02-SC-R0306 M3x6mm Round Head Screw x 7



C-02-SC-R0308 M3x8mm Round Head Screw x 1



C-02-SS-0306 M3x6mm Set Screw x 4

EXCITING SETTINGS EXPLANATION

The MPAN-RR features a dual-position battery mounting system to fine-tune chassis weight distribution and handling response:

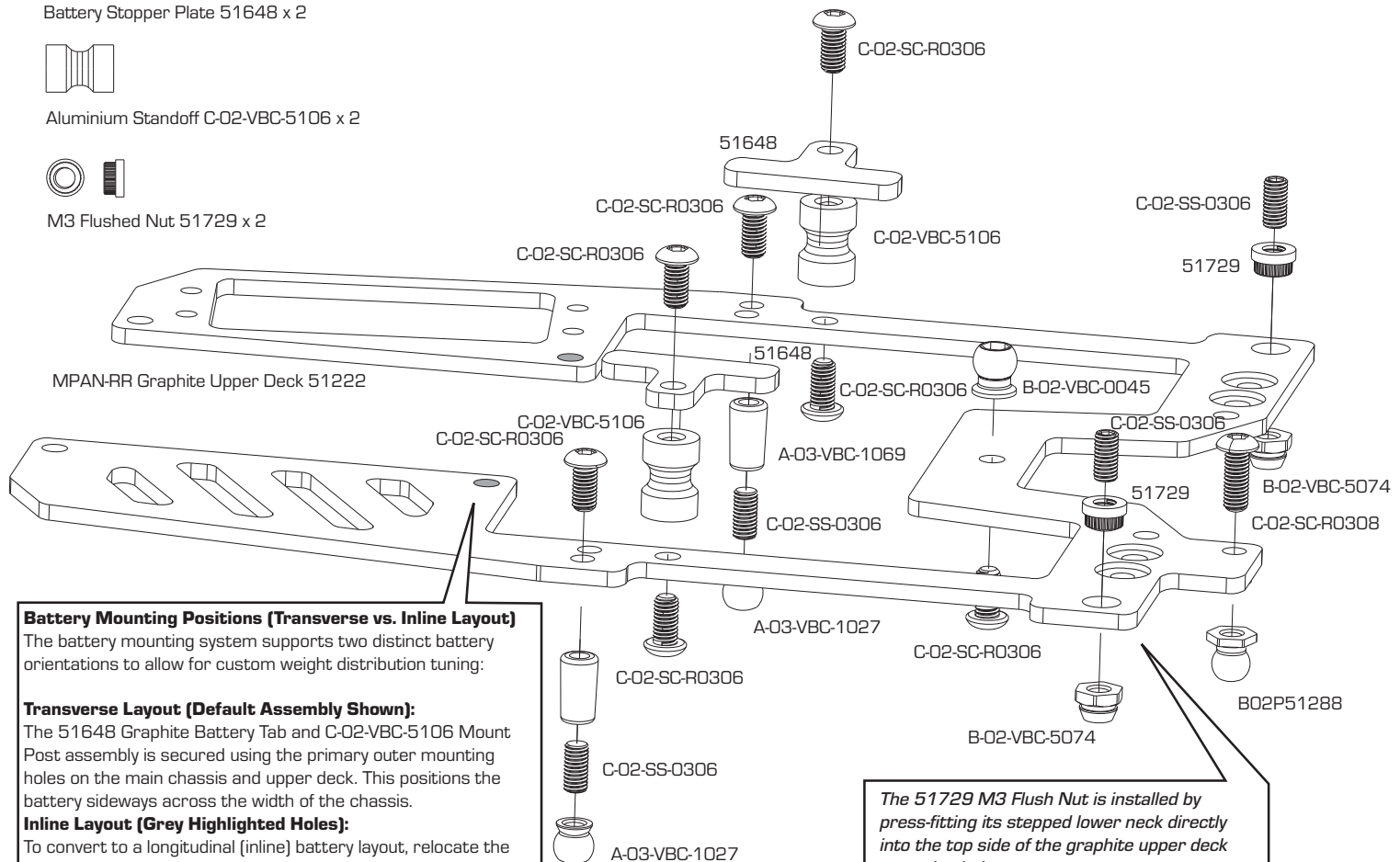
Transverse Layout (Default): Mount the 51648 Battery Tab and C-02-VBC-5106 Post using the primary outer holes. Positions the battery across the width of the chassis.

Performance: Increases rear traction and high-speed stability on high-grip carpet or smooth asphalt.

Inline Layout (Grey Holes): Mount the 51648 Battery Tab and C-02-VBC-5106 Post using the inner secondary holes (highlighted in grey). Positions the battery along the centerline.

Performance: Shifts weight forward to improve front-end steering bite and sharpens direction changes in tight, technical sections.

Note: Secure all mount posts using M3x6mm round head screws (C-02-SC-R0306). Do not over-tighten into carbon components.

**Battery Mounting Positions (Transverse vs. Inline Layout)**

The battery mounting system supports two distinct battery orientations to allow for custom weight distribution tuning:

Transverse Layout (Default Assembly Shown):

The 51648 Graphite Battery Tab and C-02-VBC-5106 Mount Post assembly is secured using the primary outer mounting holes on the main chassis and upper deck. This positions the battery sideways across the width of the chassis.

Inline Layout (Grey Highlighted Holes):

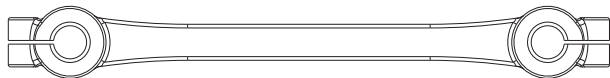
To convert to a longitudinal (inline) battery layout, relocate the 51648 Tab and C-02-VBC-5106 Post assembly to the secondary mounting holes highlighted in grey. This shifts the battery retention points to secure the pack along the centerline of the chassis.

The 51729 M3 Flush Nut is installed by press-fitting its stepped lower neck directly into the top side of the graphite upper deck mounting hole.

Once seated flush against the carbon fiber, the set screw (C-02-SS-0306) threads into it from above, providing a clean, low-profile threaded anchor point for the suspension geometry.

11

Rear Suspension



Pod Link A-03-VBC-5009 x 2



Side Spring (MED, GOLD) A-03-VBC-1047G x 2



M3x6mm Round Head Screw C-02-SC-R0306 x 4

Side Spring Tuning Guide

The MPAN-RR includes three different side spring rates to fine-tune the rear pod roll stiffness and side-to-side weight transfer:

SOFT (SILVER - OPTION Bag):

Handling: Allows the rear pod to roll more freely. Increases side bite and traction on low-to-medium grip surfaces, providing smoother weight transfer into and out of corners.

Best Used For: Low-grip asphalt or slippery track conditions.

MEDIUM (GOLD - DEFAULT):

Handling: Provides the ideal balance between side traction and roll control. Gives predictable, neutral handling across most track conditions.

Best Used For: Standard setup baseline for asphalt and medium-grip carpet tracks.

HARD (BLACK - OPTION Bag):

Handling: Resists chassis roll, sharpening steering response and making the car transition faster through direction changes. Reduces high-speed traction roll on high-bite surfaces.

Best Used For: High-grip carpet, high-bite asphalt, or technical tracks with quick chicanes.

Tuning Tip: Ensure both side springs are set to equal preload so the chassis rests level at tweak. Always adjust side springs in matching pairs.

Side Link Geometry Setup Guide

The angle of the side links (A-03-VBC-5009) determines how the rear pod articulates relative to the main chassis, controlling rear roll-steer and chassis rotation:

Parallel Side Links (Default: Outer Holes):

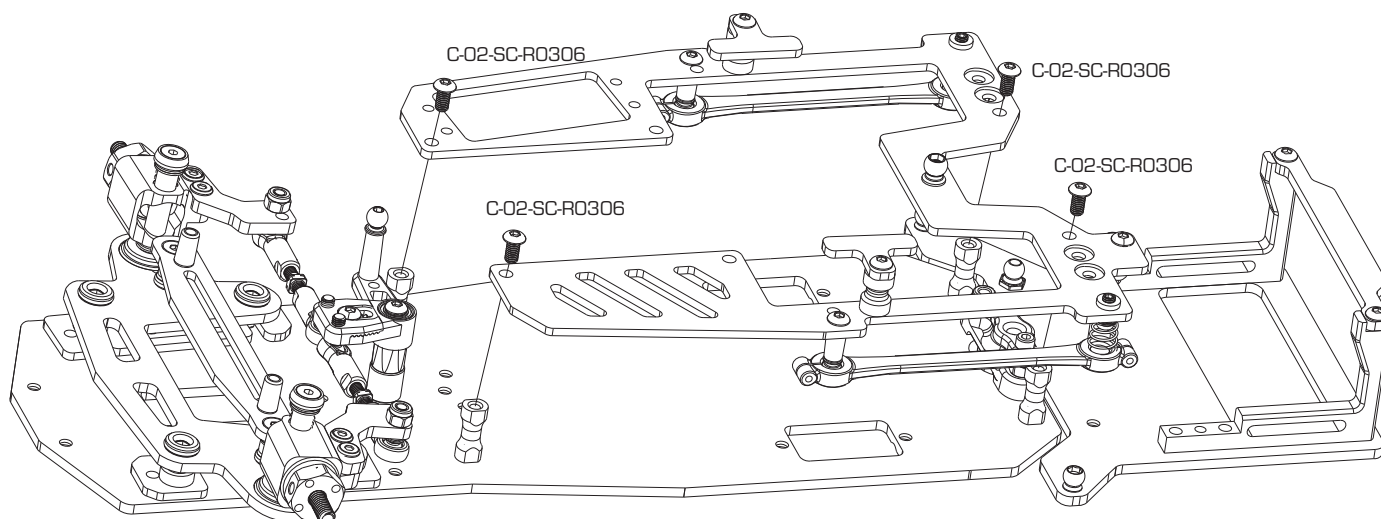
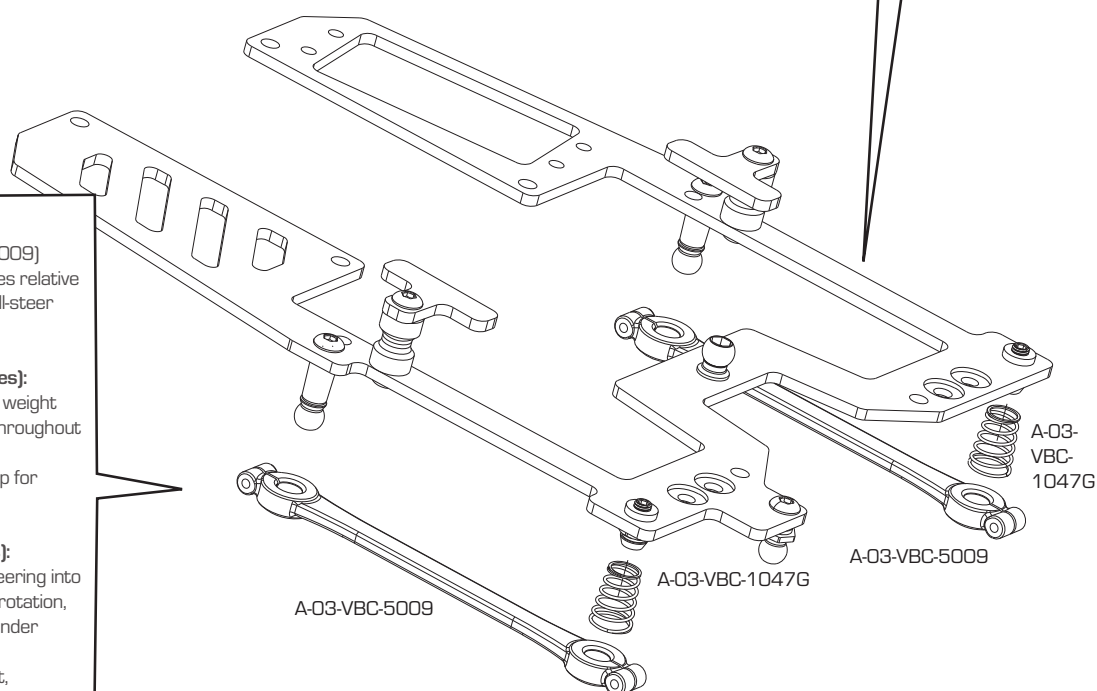
Handling: Delivers smooth, predictable weight transfer and consistent rear traction throughout the corner.

Best Used For: Standard baseline setup for general track conditions.

Toe-In/Angled Side Links (Inner Holes):

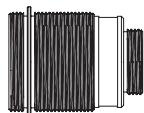
Handling: Induces subtle rear-wheel steering into the turn to increase mid-to-exit corner rotation, while creating a firmer "locked-in" feel under acceleration.

Best Used For: High-grip tracks or tight, technical layouts requiring aggressive direction changes and sharp exit turn-in.

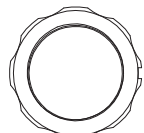


12

Center Shock



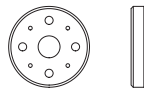
TBBS-P Shock Body(Black) 31470 x 1



TBB Shock Height Adjuster(Black) 31636 x 1



TBBS Bottom Cap(Black) 31637 x 1



TBB Shock Piston [4 holes] A-03-VBC-0138 x 1



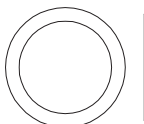
TBB Shock Bottom Connector A-03-VBC-0124 x 1



TBB Shaft Cap B-03-VBC-0125 x 1



TBBS Shock Shaft C-02-G30957 x 1



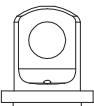
Sealer O-Ring B-03-VBC-0128 x 1



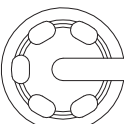
Shaft Sealer O-Ring B-03-VBC-0012 x 1



M2 E-Clip B-02-VBC-0129 x 2



TBB Shock Top Connector A-03-VBC-0130 x 1



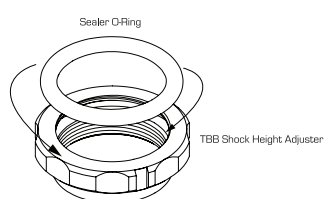
TBB Spring Support A-03-VBC-0131 x 1



TBB Oil Sealer Cap (Mediym Soft) B-03-VBC-0132 x 1



TBB Shock Body Cap(Black) 31638 x 4

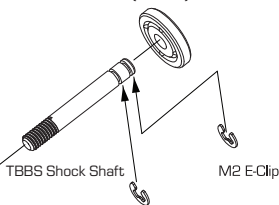


Insert Sealer O-Ring inside the Shock Height Adjuster groove



Note TBB Shock Piston Groove Is Facing Downwards

TBB Shock Piston (4 holes)



TBBS Shock Shaft

M2 E-Clip

TBBS-P Shock Body(Black)

TBB Shock Height Adjuster(Black)

Shaft Sealer O-Ring

TBBS Bottom Cap(Black)

TBB Shock Bottom Connector

TBB Oil Sealer Cap

TBB Shock Body Cap(Black)

TBB Shock Top Connector

Fill supplied shock oil and remove air by moving the piston up and down until air bubbles disappears

When placing Oil Sealer Cap make sure no bubbles are trap inside the shock body

9mm

Note the double ring face to bell connector

TBB Spring Bottom Support

N01P31613 TS2.8 Spring

13

Installing Rear Suspension



Ball Connector (Short) 31479 x 2



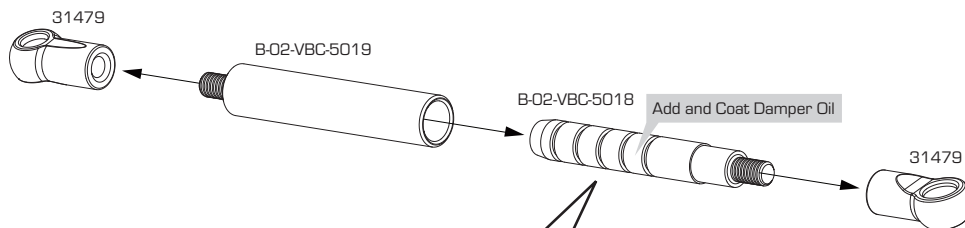
Damper Tube B-02-VBC-5019 x 1



Damper Tube Shaft B-02-VBC-5018 x 1



M2x6 CAP Head Screw C-02-SC-C0206 x 4

**Friction Tube Damping Setup Guide**

The grease/oil viscosity in the friction tubes controls the roll damping rate of the rear pod. While side springs control how much the chassis rolls, the friction tube oil controls how fast that roll occurs:

Lighter Silicone Oil (e.g., 5,000 cSt - 10,000 cSt):

Dynamics: Allows the rear pod to react quickly to cornering forces and bumps. Weight transfers rapidly across the rear axle.

Handling: Increases rear side traction and grip on low-friction tracks, making the car feel softer and more compliant. However, it can make the rear end feel loose or snappy during aggressive, high-speed direction changes.

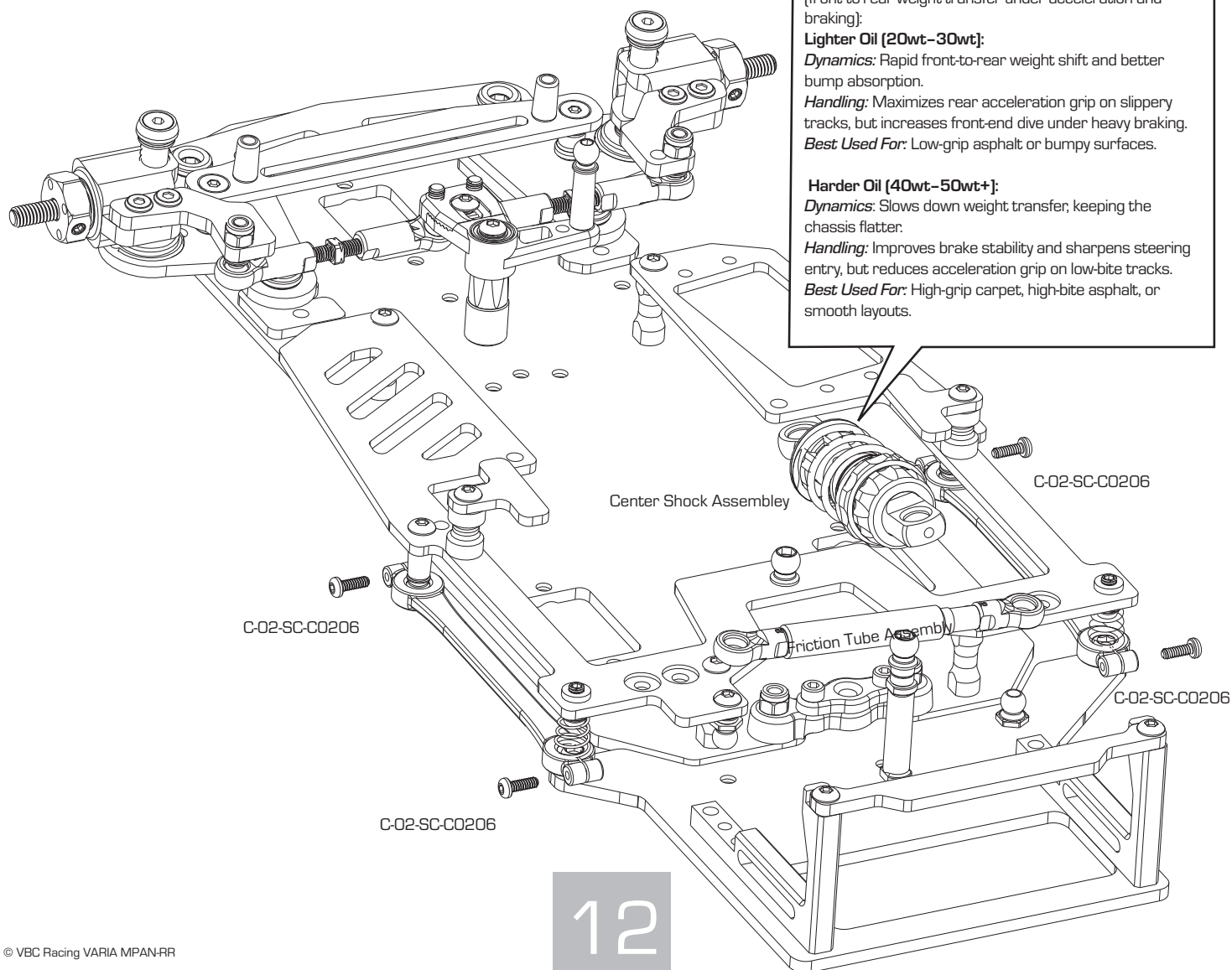
Best Used For: Low-to-medium grip asphalt or bumpy track conditions.

Harder / Thicker Silicone Oil (e.g., 20,000 cSt - 50,000 cSt+):

Dynamics: Slows down the speed of the rear pod roll, smoothing out rapid weight transitions and stabilizing the rear pod.

Handling: Makes the car feel more planted, stable, and smooth in high-speed corners. Sharpens initial steering response while preventing high-speed traction roll, though it can reduce ultimate rear side-grip on slippery surfaces.

Best Used For: High-grip carpet, high-bite asphalt, or smooth tracks with sweeping, high-speed corners.

**Center Shock Damping Setup Guide**

The oil viscosity in the center shock controls pitch damping (front-to-rear weight transfer under acceleration and braking):

Lighter Oil (20wt-30wt):

Dynamics: Rapid front-to-rear weight shift and better bump absorption.

Handling: Maximizes rear acceleration grip on slippery tracks, but increases front-end dive under heavy braking.

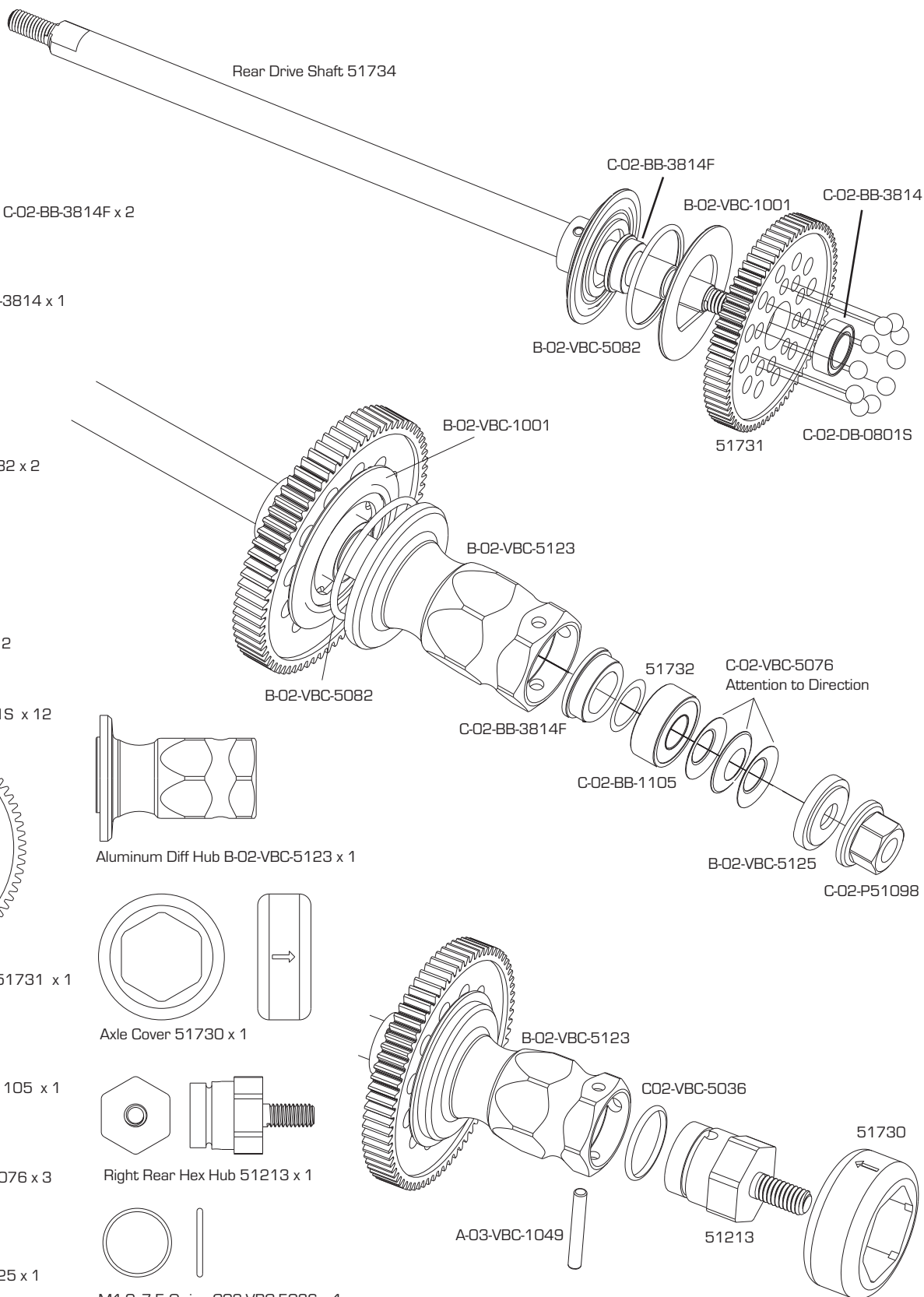
Best Used For: Low-grip asphalt or bumpy surfaces.

Harder Oil (40wt-50wt+):

Dynamics: Slows down weight transfer, keeping the chassis flatter.

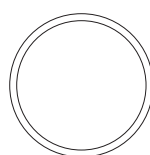
Handling: Improves brake stability and sharpens steering entry, but reduces acceleration grip on low-bite tracks.

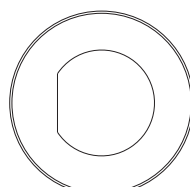
Best Used For: High-grip carpet, high-bite asphalt, or smooth layouts.

14*Rear Drive*

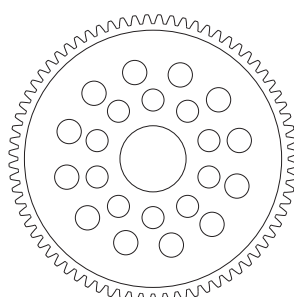
 
Bearing, 3/8 x 1/4, Flanged C-02-BB-3814F x 2

 
Bearing, 3/8 x 1/4 C-02-BB-3814 x 1

 
Diff Seal O-ring B-02-VBC-5082 x 2


Diff D Ring B-02-VBC-1001 x 2


1/8" Diff Balls C-02-DB-0801S x 12


64Pitch 86Teeth Spur Gear 51731 x 1

 
5x11 Ball Bearings C-02-BB-1105 x 1

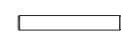
 
Bevelled Washer C-02-VBC-5076 x 3

 
Thrust Washer B-02-VBC-5125 x 1

 
M5x8x0.3 Spacer 51732 x 1

 
M4 Lock Nut C-02-P51098 x 1

M1.0x7.5 O-ring C02-VBC-5036 x 1

 
M2x14 Shaft Pin A-03-VBC-1049 x 1

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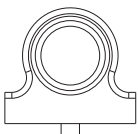
Rear Drive



M5x8x0.3 Spacer 51732 x 4



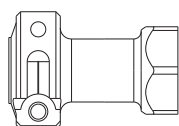
Bearing, 3/8 x 1/4, Flanged C-02-BB-3814F x 2



Rear Axle Housing B02P50666 x 2



Drive Shaft Spacer 2mm 51225 x 3



Left Rear Hex Hub 51220 x 1



M2.5x6 Cap Head Screw C-02-SC-C2506 x 1

C-02-SC-C2506

C-02-BB-3814F

C-02-BB-3814F

B02P50666

Graphite Axle Tube A01P51194

B02P50666

51225

C-02-SC-C2506

Rear Axle Height Adjustment (Spacers A01P31399 & 51780)

Shimming under the axle housings adjusts axle height to tune roll center and compensate for tire diameter:

Adding Spacers (Lower Ride Height / Smaller Tires):

Dynamics: Lowers the rear roll center and center of gravity.

Handling: Increases stability and prevents traction roll on high-grip tracks.

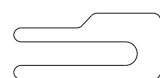
Best Used For: High-grip carpet/asphalt or worn, trued-down tires.

Removing Spacers (Higher Ride Height / Larger Tires):

Dynamics: Raises the rear roll center and center of gravity.

Handling: Increases weight transfer for more rear grip on slippery surfaces.

Best Used For: Low-grip tracks or brand-new, full-size tires.



3mm Axle Spacer A01P31399 x 2



M3x12mm Flat Head Screw C-02-VBC-F0312 x 4

1.5mm Axle Spacer 51780
in OPTION bag (Optional)

A01P31399

1.5mm Axle Spacer 51780
in OPTION bag (Optional)

A01P31399

C-02-VBC-F0312

C-02-VBC-F0312

14

16**Bumper & Body Posts**

M3 Lock Nut C-02-VBC-NN03 x 2



2mm Spacer A-03-VBC-0052 x 4



M3x10mm Round Head Screw C-02-VBC-0310 x 6



M3x16mm Flat Head Screw C-02-VBC-F0316 x 2



Aluminium Body Adjuster B02G30405 x 4



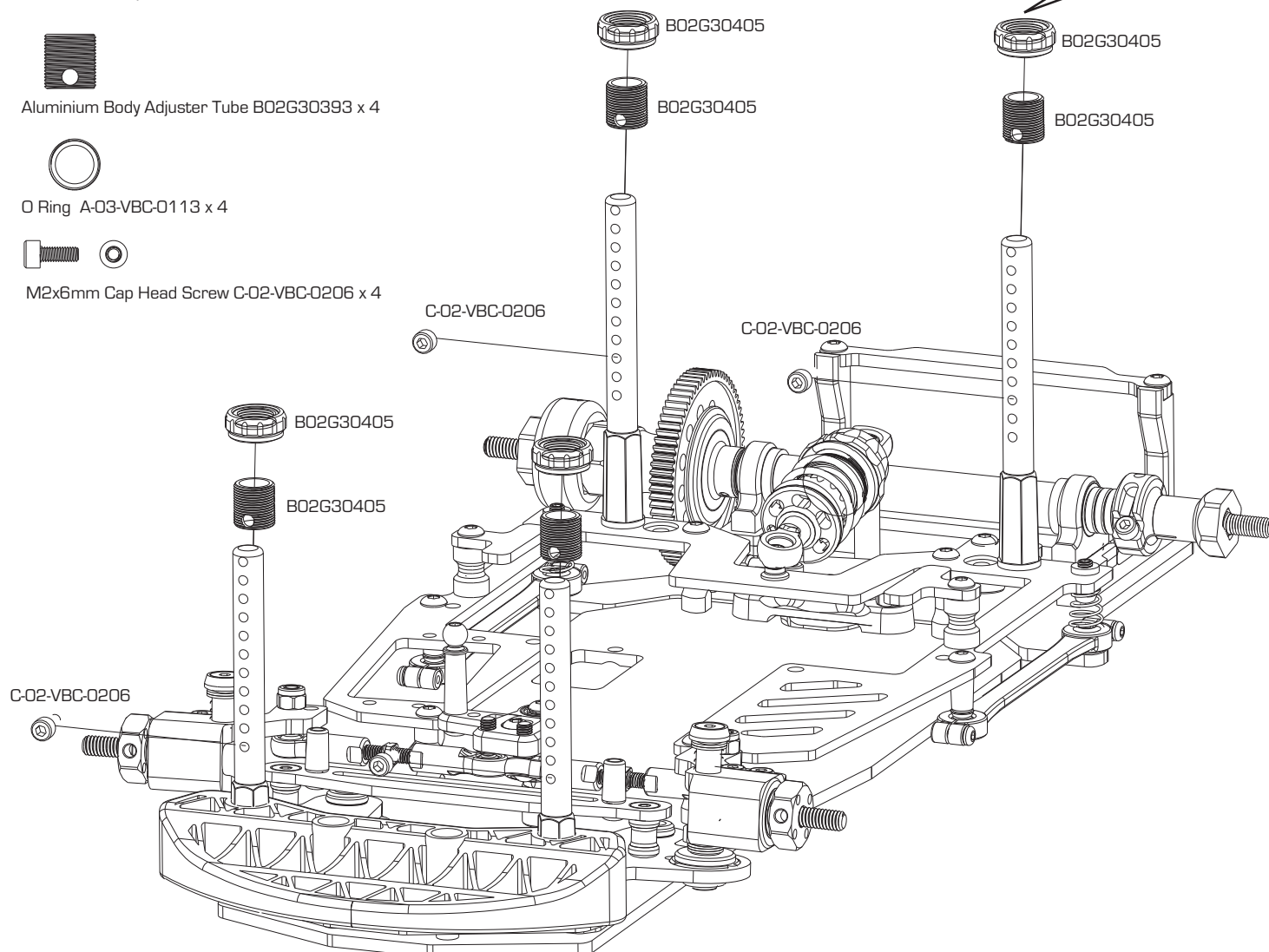
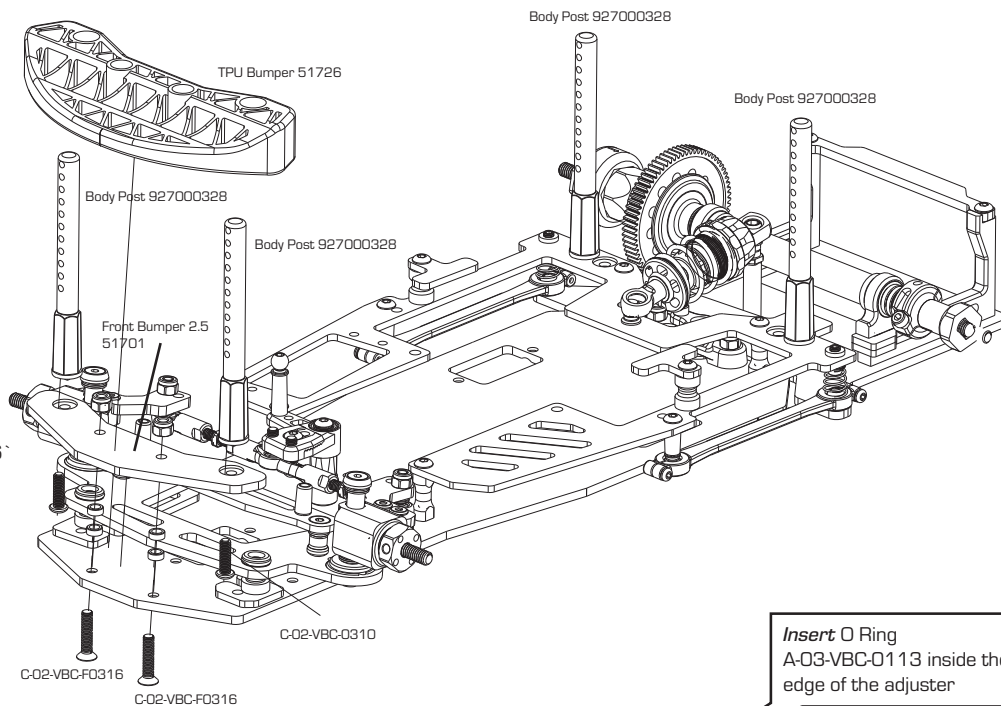
Aluminium Body Adjuster Tube B02G30393 x 4

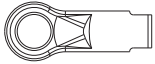


O Ring A-03-VBC-0113 x 4

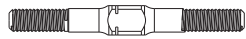


M2x6mm Cap Head Screw C-02-VBC-0206 x 4

**15**

17*Steering Servo Installation*

Ball Connector (Long) 31478 x 2



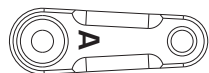
32mm Turnbuckle B-02-VBC-5102 x 1



Ball Joint 31517 x 1



Servo Horn Type F A-03-VBC-0053 x 1



Servo Horn Type A A-03-VBC-0054 x 1



Servo Spacer 2mm A-03-VBC-0033 x 4



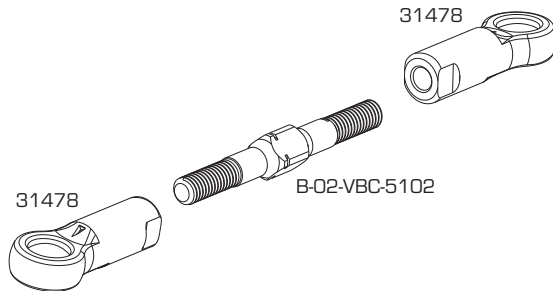
M3 Lock Nut C-02-SC-NN03 x 4



M3x16 Flathead Screw C-02-SC-F0316 x 4

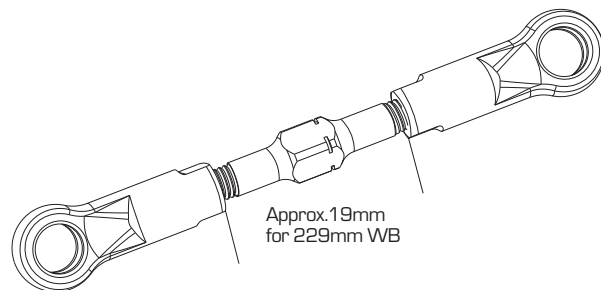
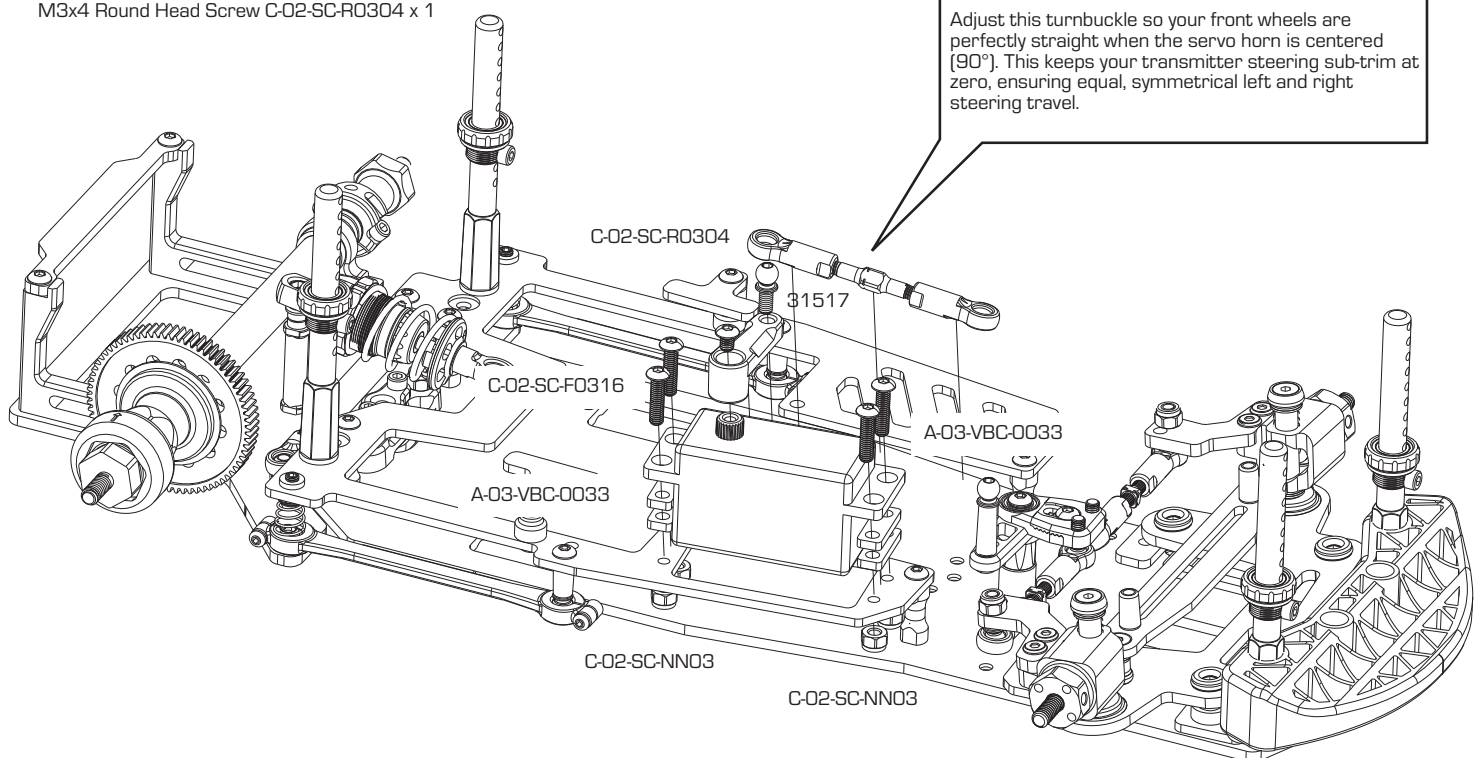


M3x4 Round Head Screw C-02-SC-R0304 x 1



31478

B-02-VBC-5102

Approx. 19mm
for 229mm WB

Adjust this turnbuckle so your front wheels are perfectly straight when the servo horn is centered (90°). This keeps your transmitter steering sub-trim at zero, ensuring equal, symmetrical left and right steering travel.

Default Transverse Layout Recommendation

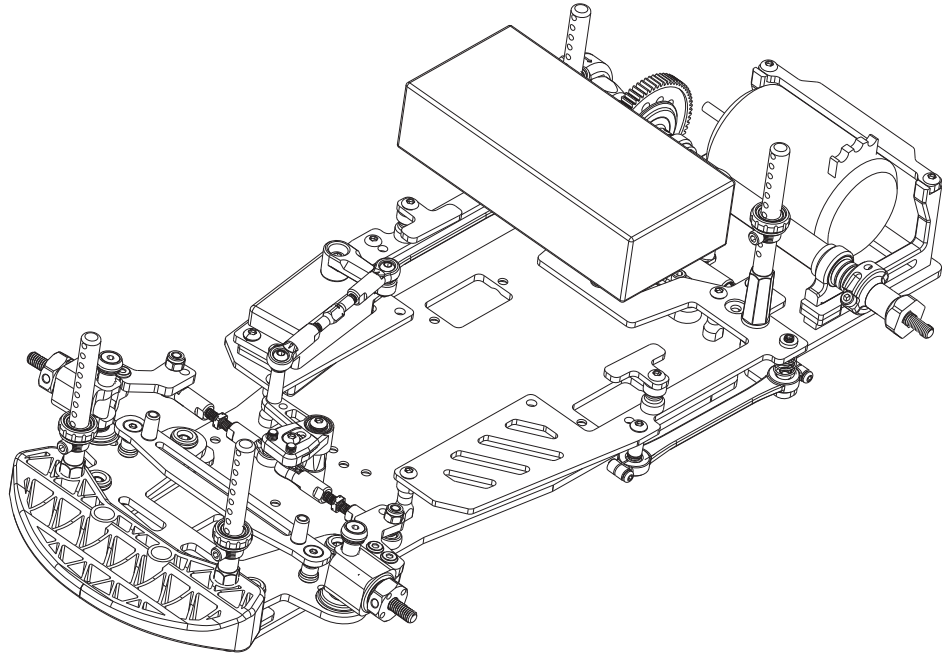
We recommend the Transverse Layout as the out-of-the-box baseline because it offers the most stable and forgiving setup for the MPAN-RR:

Maximum Rear Acceleration Traction: Placing the battery's weight directly across the rear pod loads both rear tires evenly, maximizing forward drive and rear-end grip out of corners.

Rear-End Stability & Anti-Spin Control: Pushing mass outward increases the polar moment of inertia, making the rear end less prone to suddenly snapping or sliding out under heavy throttle.

Traction Roll Prevention: Spreading the mass across the chassis lowers roll velocity, helping prevent the car from rolling over on high-grip surfaces.

Ideal For: Out-of-the-box baseline driving on high-bite carpet or smooth asphalt tracks, ensuring consistent, planted performance for most track conditions.

**Initial Setting and Gearing**

For the included 64P 86T spur gear, start with a 30T 64P pinion gear as your standard baseline setup.

When running a 13.5T to 21.5T stock brushless motor, this combination gives a 5.73 final drive ratio for an ideal balance of acceleration and top speed on medium-to-large tracks.

If you are running a modified brushless motor, drop down to a 25T to 27T pinion (6.88 to 6.37 FDR) to tame high-power output and keep motor temperatures under control. For a standard 27T or 540 brushed motor setup, use a 28T pinion (6.63 FDR) to maintain strong punch while preventing thermal overload.

Due to the rear-motor layout, aggressive initial torque can lift the front end under acceleration and reduce steering precision. To ensure smooth power delivery, set your ESC Punch or Initial Drive profile to a softer setting. Additionally, applying a minor negative exponential curve (~10% to ~20% EXPO) on your transmitter throttle channel will help smooth out off-the-line throttle response while retaining the full top speed of your gearing.

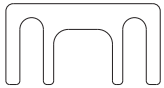
18

Inline Battery Layout

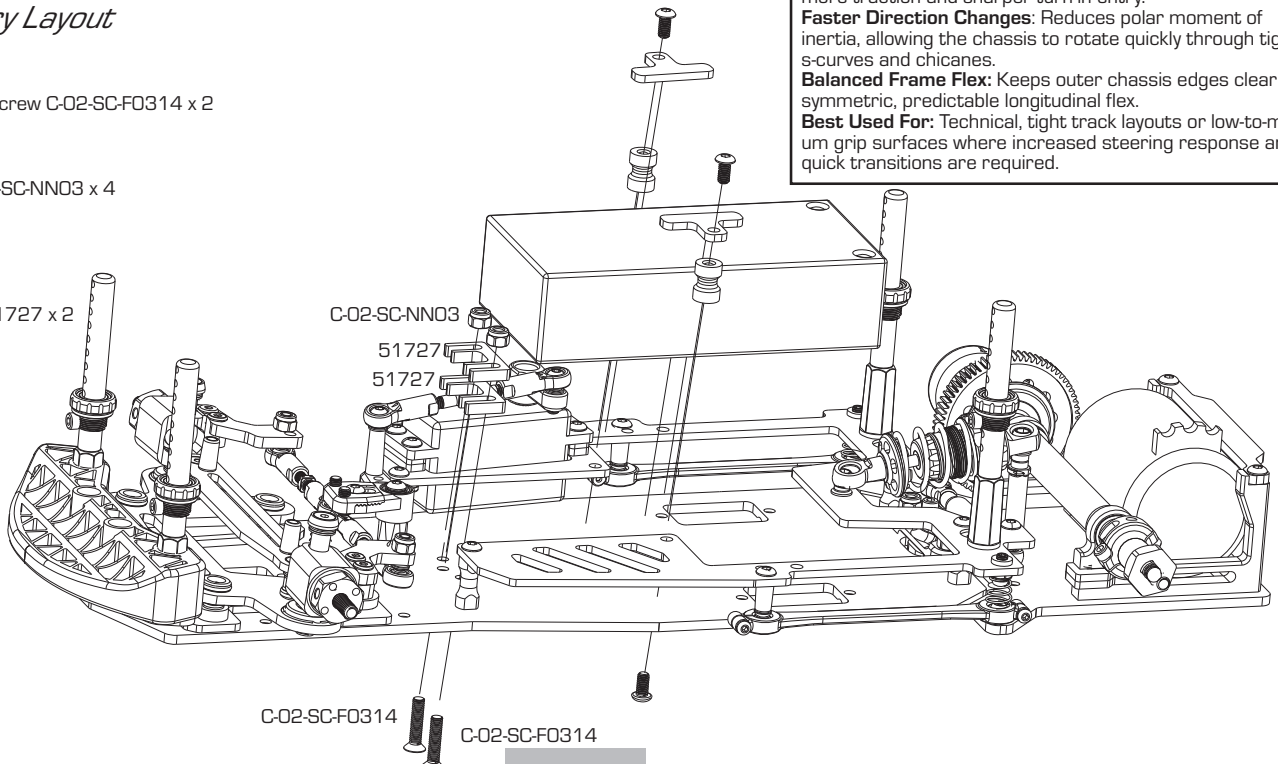
M3x14 Flathead Screw C-02-SC-F0314 x 2



M3 Lock Nut C-02-SC-NN03 x 4



Battery Stopper 51727 x 2

**Inline Battery Layout Setup Guide**

Positioning the battery along the chassis centerline shifts the weight bias forward and centers the vehicle's mass:

Improved Front-End Bite: Counteracts the rearward weight bias of the rear-motor (RR) layout, giving the front tires more traction and sharper turn-in entry.

Faster Direction Changes: Reduces polar moment of inertia, allowing the chassis to rotate quickly through tight s-curves and chicanes.

Balanced Frame Flex: Keeps outer chassis edges clear for symmetric, predictable longitudinal flex.

Best Used For: Technical, tight track layouts or low-to-medium grip surfaces where increased steering response and quick transitions are required.



COMPETITION GRADE HIGH PERFORMANCE RADIO CONTROL RACING CAR CHASSIS KIT

VARIA **MPAN-RR**

1/10 SCALE ELECTRIC COMPETITION CAR KIT

1/10 SCALE ELECTRIC COMPETITION PAN CAR KIT

Instruction Book P-01-P51439 VBC Racing Lightning VARIA MPAN-RR 2027 PAN CAR KIT D-05-VBC-CK62